REMARKS/ARGUMENTS

The Office Action mailed November 27, 2006 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. The claims presented for examination are: claims 1-30.

Applicant's Claimed Invention

The invention defined by Applicant's independent claim 1 is: A system adapted for use for multimedia encryption comprising:

acquisition means for acquiring a media signal, said acquisition means including a random noise transducer for acquiring random noise only, said random noise being unpredictable from one moment to the next and not being chaotic noise;

data compression means coupled to said acquisition means to receive and compress said media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise into a compressed data stream;

data acquisition means coupled to said data compression means to receive and select a set of data from the compressed data stream; and

hashing means coupled to said data acquisition means to receive and hash the set of data into a keyword.

The invention defined by Applicant's independent claim 10 is: A method adapted for use for multimedia encryption, comprising the steps of:

"acquiring a random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise;

compressing said random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise;

selecting a set of data from the compressed media signal; and

hashing the set of data into a keyword."

The invention defined by Applicant's independent claim 24 is: A computer-useable medium embodying computer program code adapted for use for multimedia encryption by executing the steps of:

"acquiring a random noise only media signal, said random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise;

compressing said random noise only media signal, said random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise;

selecting a set of data from the compressed media signal; and

hashing the set of data into a keyword."

Within the system of the present invention, a data compression module receives and compresses a media signal into a compressed data stream. A data acquisition module receives and selects a set of data from the compressed data stream. And, a hashing module receives and hashes the set of data into a keyword. Figure 1 (below) is a block diagram of a system 100 for multimedia encryption according to the present invention. Within the system 100, a transducer 102, such as a video camera, a radio, a microphone, a Geiger counter, or an electrical component, outputs a media signal 104. (Applicant's Specification Page 7, lines 2-5)

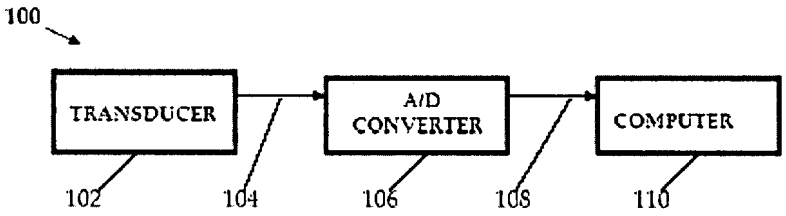


FIG. 1

"In one embodiment of the present invention, the media signal need only include random transducer noise having a noise signal amplitude. Random noise is not the same a chaotic noise. Random noise, such as white Gaussian noise, is completely unpredictable from one moment to a next, while chaotic noise is highly predictable over short time periods." (Page 7, lines 10-15 of Applicant's Original Specification)

35 U.S.C. §112, First Paragraph Rejection (Written Description)

In numbered paragraph 2 of the Office Action mailed November 27, 2006, claims 1-30 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Final Rejection mailed November 27, 2006 states: "Claims 1-30 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 10, 17, and 24 recite limitation 'random noise being unpredictable from one moment to the next.' This limitation is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention."

Limitation Was Described In Original Specification

The limitation was described in the original specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. The relevant limitation in the four independent claims 1, 10, 17, and 24 is set out below.

Relevant limitation in claim 1: "said acquisition means including a random noise transducer for acquiring random noise only, said random noise being unpredictable from one moment to the next and not being chaotic noise."

Relevant limitation in claim 10: "acquiring a random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise."

Relevant limitation in claim 17: "acquisition means for acquiring a media signal, said acquisition means including a random noise transducer for acquiring said media signal, said random noise transducer acquiring said media signal containing only random noise that is unpredictable from one moment to the next and not being chaotic noise."

Relevant limitation in claim 24: "acquiring a random noise only media signal, said random noise only media signal containing random noise that is unpredictable from one moment to the next and not being chaotic noise."

Appellants believe it is clear from the original specification that a person skilled in the art would recognize that the inventor had possession of the claimed invention including the claim limitation "random noise being unpredictable from one moment to the next" of claims 1, 10, 17, and 24. The limitation "random noise being unpredictable from one moment to the next" of Claims 1, 10, 17, and 24 and Appellants' original specification are compared below.

The Limitation	Appellants' Original Specification
random noise being unpredictable from one moment to the next	In one embodiment of the present invention, the media signal need only include random transducer noise having a noise signal amplitude. Random noise is not the same a chaotic noise. Random noise, such as white Gaussian noise, is completely unpredictable from one moment to a next, while chaotic noise is highly predictable over short time periods. (Page 7, lines 10-15 of Appellants' Original Specification)

Appellants' specification discusses and describes "random noise" throughout the application. Appellants' specification in connection with FIG. 2 states, "The random noise in the media signal 104 will cause even unchanging video scenes to have quantization values 206 which fluctuate for media signal values close to one or more quantization steps 204. ..... Typically, the transducer noise is sufficient to cause the quantization values 206 to fluctuate. However, if the transducer noise is small relative to the quantization steps 204, then either video or audio content of the media signal 104 must vary somewhat so that what little noise is in the scene will enable random noise to be quantized by the A/D converter 106. Randomness will be present in the media signal 104 when an actual sampled media signal value 208 is very close to a quantization boundary 210."

A person skilled in the art would recognize that the inventor had possession of the claimed invention including the claim limitation "random noise being unpredictable from one moment to the next" of claims 1, 10, 17, and 24. The concepts and fundamentals of "random noise" were well known in the prior art at the time Applicants filed their patent application. For example, the October 16, 1998 publication "DESIGN OF RANDOM NOISE GENERATOR USING SW ALGORITHM" by Jinkeun Hong, Sunchun Park, Janghong Yoon, Jaeyoung Koh, and Daeho Kim and the publication cited in the article describe.

concepts and fundamentals of "random noise." A copy of the October 16, 1998 publication "DESIGN OF RANDOM NOISE GENERATOR USING SW ALGORITHM" by Jinkeun Hong, Sunchun Park, Janghong Yoon, Jaeyoung Koh, and Daeho Kim is attached.

Person Skilled In The Art

The level of skill of a person skilled in the relevant art is very high being scientists with BS degrees in electrical engineering or computer sciences and advanced degrees in electrical engineering or computer sciences. The lead inventor, Douglas R. Coffland, is Division Leader - Security Engineering and Computation Division of the Lawrence Livermore National Laboratory. The Lawrence Livermore National Laboratory (LLNL) is a premier applied science laboratory that is part of the National Nuclear Security Administration (NNSA) within the Department of Energy (DOE). The LLNL website states that LLNL employs 6,600 full-time employees, including 2,681 scientists and engineers of which 1,212 hold Ph.D degrees. The *Wikipedia, the free encyclopedia* describes the Lawrence Livermore National Laboratory. A copy of the *Wikipedia, the free encyclopedia* description of the Lawrence Livermore National Laboratory is attached.

The Lawrence Livermore National Laboratory computer operations are the best in the world. According to recent TOP500 lists, Computation operates some of the world's fastest supercomputers: BlueGene/L, a cooperative project to design and build a computer architecture capable of scaling to hundreds of teraflops (TF); ASC Purple, a genuinely huge machine based on symmetric shared-memory multiprocessors containing more than 12,000 next-generation IBM Power5 microprocessors and capable of 100 TF; and Thunder (right), a highly integrated, well-balanced capability compute resource with 1,024 nodes and a theoretical system peak performance of 22.9 TF. Copies of two pages from

the Lawrence Livermore National Laboratory website www.llnl.gov are attached.

Encryption is of high importance to the National Nuclear Security Administration (NNSA), the Department of Energy (DOE), and the Lawrence Livermore National Laboratory. The lead inventor, Douglas R. Coffland, as Division Leader - Security Engineering and Computation Division of the Lawrence Livermore National Laboratory is highly skilled in Encryption. The lead inventor, Douglas R. Coffland, as Division Leader - Security Engineering and Computation Division of the Lawrence Livermore National Laboratory had possession of the claimed invention including the claim limitation "random noise being unpredictable from one moment to the next" of claims 1, 10, 17, and 24.

Appellants' specification taken as a whole supports the claim limitation. MPEP §2163 II.A.3 states, "An adequate written description of the invention may be shown by any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention."

There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. In re Wertheim, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976), the implication stated in the Final Rejection is contradicted by Appellants' specification taken as a whole. The implication stated in the Final Rejection is not sufficient to overcome the presumption that an adequate written description of the claimed invention is present when the application is filed.

The rejection of claims 1-30 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement should be withdrawn.

35 U.S.C. §112, First Paragraph Rejection (Disclosure)

In numbered paragraph 3 of the Office Action mailed November 27, 2006, claims 1-30 were rejected under 35 U.S.C. §112, first paragraph, as allegedly based on a disclosure which is not enabling. The rejection states: "Multimedia encryption critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The preamble of claims 1 and 17 state 'a system for multimedia encryption.' The preamble of claim 10 states 'a method for multimedia encryption.' The preamble for claim 24 states 'a computer-usable medium embodying computer program code for multimedia encryption.' Both the specification and the claims disclose steps for producing a keyword which could be used as a key for encryption or a key for generating pseudo-random numbers that are later used in encryption, however, neither the specification nor the claims disclose any steps, elements or instructions that encrypt multimedia."

The concepts and fundamentals of term "multimedia encryption" were well known in the prior art at the time Appellants filed their patent application. The term "multimedia encryption" is part of the title of the subject application and is used throughout the patent application. Appellant's original specification describes the claimed invention sufficiently to enable one skilled in the relevant art to practice the invention and meets the requirements of 35 U.S.C. § 112, first paragraph.

Dr. Borko Furht, Chairman & Professor Department of Computer Science and Engineering, Florida Atlantic University, Boca Raton, FL had written numerous publications discussing the concepts and fundamentals of term "multimedia encryption" at the time Appellants filed their patent application. A list of Dr. Borko's publications and a copy of the publication "Fundamentals of

Multimedia Encryption Techniques" by Dr. Borko are attached. Dr. Borko Furht's main areas of research were: "Image and video coding and processing," "Wireless multimedia technologies," and "Secure multimedia communications."

Person Skilled In The Art

The level of skill of a person skilled in the relevant art is very high being scientists with BS degrees in electrical engineering or computer sciences and advanced degrees in electrical engineering or computer sciences. The lead inventor, Douglas R. Coffland, is Division Leader - Security Engineering and Computation Division of the Lawrence Livermore National Laboratory. The Lawrence Livermore National Laboratory (LLNL) is a premier applied science laboratory that is part of the National Nuclear Security Administration (NNSA) within the Department of Energy (DOE). The LLNL website states that LLNL employs 6,600 full-time employees, including 2,681 scientists and engineers of which 1,212 hold Ph.D degrees. The *Wikipedia, the free encyclopedia* describes the Lawrence Livermore National Laboratory. The *Wikipedia, the free encyclopedia* description of the Lawrence Livermore National Laboratory is attached.

There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. In re Wertheim, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). Appellant's original specification contains an adequate written description of the claimed invention for a person skilled in the art to practice the claimed invention. Also, the concepts and fundamentals of term "multimedia encryption" were well known in the prior art at the time Appellants filed their patent application. Appellant submits that, based upon the original specification, a person skilled in the art could practice the claimed invention.

The 35 U.S.C. § 112, first paragraph, rejection of claims 1-30 as based on a disclosure which is not enabling should be withdrawn.

35 U.S.C. §112, Second Paragraph Rejection

In numbered paragraph 6 of the Office Action mailed November 27, 2006, claims 1-30 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention and as allegedly being incomplete for omitting essential steps, elements or instructions. The Office Action mailed November 27, 2006 stated: "See MPEP § 2172.01. The preamble of claims 1 and 17 state 'a system adapted for use for multimedia encryption.' The preamble of claim 10 states 'a method adapted for use for multimedia encryption.' The preamble for claim 24 states 'a computer-usable medium embodying computer program code adapted for use for multimedia encryption.' However the steps, elements, or instructions of the claims disclose creating a keyword. The claims omit the steps, elements, or instructions of actually encrypting any multimedia data."

Appellants' claimed invention defined by independent claim 1 is "a system adapted for use for multimedia encryption." Claim 1 includes a combination of structural elements that produce the system adapted for use for multimedia encryption. The structural elements include "acquisition means for acquiring a media signal," "data compression means coupled to said acquisition means to receive and compress said media signal," "data acquisition means coupled to said data compression means to receive and select a set of data from the compressed data stream," and "hashing means coupled to said data acquisition means to receive and hash the set of data into a keyword." These structural elements produce the system adapted for use for multimedia encryption. There are no essential structural elements omitted.

Appellants' submits that claim 1 describes the invention sufficiently and particularly points out and distinctly claims the subject matter which applicant

regards as the invention, claim 1 is not incomplete for omitting essential elements, and claim 1 meets the requirements of 35 U.S.C. § 112, second paragraph.

Appellants' claimed invention defined by independent claim 10 is "a method adapted for use for multimedia encryption." Claim 10 includes a combination of steps. The steps include "acquiring a random noise only media signal," "compressing said random noise only media signal," "selecting a set of data from the compressed media signal," and "hashing the set of data into a keyword." There are no essential steps omitted.

Appellants' submits that claim 10 describes the invention sufficiently and particularly points out and distinctly claims the subject matter which applicant regards as the invention, claim 10 is not incomplete for omitting essential steps, and claim 10 meets the requirements of 35 U.S.C. § 112, second paragraph.

Appellants' claimed invention defined by independent claim 17 is "a system adapted for use for multimedia encryption." Claim 17 includes a combination of structural elements that produce the system adapted for use for multimedia encryption. The structural elements include "acquisition means for acquiring a media signal," "data compression means coupled to said acquisition means to receive and compress said media signal," "selection means coupled to said data compression means for selecting a set of data from the compressed data stream," and "hashing means coupled to said selection means for hashing the set of data into a keyword." These structural elements produce the system adapted for use for multimedia encryption. There are no essential structural elements omitted.

Appellants' submits that claim 17 describes the invention sufficiently and particularly points out and distinctly claims the subject matter which applicant regards as the invention, claim 17 is not incomplete for omitting essential

elements, and claim 17 meets the requirements of 35 U.S.C. § 112, second paragraph.

Appellants' claimed invention defined by independent claim 24 is "a computer-useable medium embodying computer program code adapted for use for multimedia encryption by executing the steps." Claim 24 includes a combination of steps. The steps include "acquiring a random noise only media signal," "compressing said random noise only media signal," "selecting a set of data from the compressed media signal," and "hashing the set of data into a keyword." The steps produce the computer-useable medium embodying computer program code adapted for use for multimedia encryption. There are no essential steps omitted.

Appellants' submits that claim 24 describes the invention sufficiently and particularly points out and distinctly claims the subject matter which applicant regards as the invention, claim 24 is not incomplete for omitting essential steps, and claim 24 meets the requirements of 35 U.S.C. § 112, second paragraph.

The rejection of claims 1-30 under 35 U.S.C. § 112, first paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention and as allegedly being incomplete for omitting essential steps, elements or instructions should be withdrawn.

35 U.S.C. §101 Rejection

In numbered paragraph 8 of the Office Action mailed November 27, 2006, Claims 1-23 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. 25-30 were rejected for depending on independent claims 1, 10, 17, and 24. The Office Action mailed November 27, 2006 stated: "The claims do not recite a practical application by producing a physical transformation or producing a useful, concrete, and tangible result. To

perform a physical transformation, the claimed invention must transform an article of physical object into a different state or thing. Transformation of data is not a physical transformation. A useful, concrete, and tangible result must be either specifically recited in the claim or flow inherently therefrom. To be useful the claimed invention must establish a specific, substantial, and credible utility. To be concrete the claimed invention must be able to produce the same results given the same initial starting conditions. To be tangible the claimed invention must produce a practical application or real world result. In this case the claims fail to perform a physical transformation because the claims are directed to operating on data. The claims are useful and concrete, but they fail to produce a tangible result because the keyword is never presented for use by another process or the user and is never stored."

Appellants' claimed invention defined by independent claim 1 is "a system adapted for use for multimedia encryption." Claim 1 includes a combination of structural elements that produce the system adapted for use for multimedia encryption. The structural elements include "acquisition means for acquiring a media signal," "data compression means coupled to said acquisition means to receive and compress said media signal," "data acquisition means coupled to said data compression means to receive and select a set of data from the compressed data stream," and "hashing means coupled to said data acquisition means to receive and hash the set of data into a keyword."

The Examiner's allegation that the claims "fail to produce a tangible result because the keyword is never presented for use by another process or the user and is never stored" is not sufficient to render the claimed invention to be non-statutory subject matter. The structural element of claim 1, "hashing means coupled to said data acquisition means to receive and hash the set of data into a keyword" is one structural element of an apparatus comprising the combination

of structural elements of claim 1. These structural elements produce and apparatus adapted for use for multimedia encryption. That use flows inherently from the apparatus.

The structural elements of claim 1 produce an apparatus that is useful. Applicant's original specification page 4, lines 19-22 and page 5, lines 1-2 states, "The system/apparatus and method of the present invention are particularly advantageous over the prior art because a means of capturing random numbers for encryption seeding directly from variable frame boundary compressed data is disclosed. In light of a growing importance in securely transmitting multimedia data over digital networks, obtaining random numbers directly from the multimedia data would be very useful."

Appellants' claimed invention defined by independent claim 10 is "a method adapted for use for multimedia encryption." Claim 10 includes a combination of steps. The steps include "acquiring a random noise only media signal," "compressing said random noise only media signal," "selecting a set of data from the compressed media signal," and "hashing the set of data into a keyword." These method steps produce a tangible result and the result is useful. Applicant's original specification page 4, lines 19-22 and page 5, lines 1-2 states, "The system/apparatus and method of the present invention are particularly advantageous over the prior art because a means of capturing random numbers for encryption seeding directly from variable frame boundary compressed data is disclosed. In light of a growing importance in securely transmitting multimedia data over digital networks, obtaining random numbers directly from the multimedia data would be very useful."

The Examiner's allegation that the claims "fail to produce a tangible result because the keyword is never presented for use by another process or the user and is never stored" is not sufficient to render the claimed invention to be

non-statutory subject matter. The method steps of claim 10 result in method adapted for use for multimedia encryption. That use flows inherently from the method.

Appellants' claimed invention defined by independent claim 17 is "a system adapted for use for multimedia encryption." Claim 17 includes a combination of structural elements that produce the system adapted for use for multimedia encryption. The structural elements include "acquisition means for acquiring a media signal," "data compression means coupled to said acquisition means to receive and compress said media signal," "selection means coupled to said data compression means for selecting a set of data from the compressed data stream," and "hashing means coupled to said selection means for hashing the set of data into a keyword."

The Examiner's allegation that the claims "fail to produce a tangible result because the keyword is never presented for use by another process or the user and is never stored" is not sufficient to render the claimed invention to be non-statutory subject matter. The structural element of claim 17, "hashing means coupled to said data acquisition means to receive and hash the set of data into a keyword" is one structural element of an apparatus comprising the combination of structural elements of claim 17. These structural elements produce and apparatus adapted for use for multimedia encryption. That use flows inherently from the apparatus.

The structural elements of claim 17 produce an apparatus that is useful. Applicant's original specification page 4, lines 19-22 and page 5, lines 1-2 states, "The system/apparatus and method of the present invention are particularly advantageous over the prior art because a means of capturing random numbers for encryption seeding directly from variable frame boundary compressed data is disclosed. In light of a growing importance in securely transmitting multimedia

data over digital networks, obtaining random numbers directly from the multimedia data would be very useful."

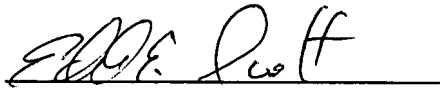
The rejection of claims 1-23 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter should be withdrawn.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the foregoing remarks, the rejections of the claims raised in the Office Action mailed November 27, 2006 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. Appellants' invention defined by claims 1-30 provides a system and method adapted for use for multimedia encryption that complies with the written description requirement, is based on a disclosure which is enabling, includes all essential steps, elements, and instructions, and is directed to statutory subject matter. It is respectfully requested that claims 1-30 be allowed.

If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



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